<u>CLAIMS</u>

We claim:

1   1.   A method of extracting electrical characteristics from an integrated

2 circuit layout, said method comprising:

3   dividing said integrated circuit layout into at least one extraction sub problem;

4   identifying a set of physical parameters that define said extraction sub problem

5   from said integrated circuit layout;

6   supplying said set of physical parameters to a machine-learning model trained

7   with Bayesian inference implemented with a Monte Carlo method; and

8   calculating at least one electrical characteristic for said extraction sub problem by

9   analyzing said set of physical parameters with said machine-learning model

10   trained with Bayesian inference implemented with a Monte Carlo method.

1   2.   The method as claimed in claim 1 wherein said electrical

2 characteristic comprises capacitance.

1   3.   The method as claimed in claim 1 wherein said electrical

2 characteristic comprises resistance.

1   4.   The method as claimed in claim 1 wherein said extraction sub

2 problem comprises a net.

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1   5.   The method as claimed in claim 1 wherein said extraction sub

2 problem comprises a section of interconnect wiring.

1   6.   The method as claimed in claim 1 wherein one of said set of

2 physical parameters comprises a distance between a pair of interconnect lines.

1   7.   The method as claimed in claim 1 wherein one of said set of

2 physical parameters comprises a wire width.

1   8.   The method as claimed in claim 1 wherein one of said set of

2 physical parameters comprises a wire length.

1   9.   The method as claimed in claim 1, said method further comprising:

2   selecting said machine-learning model from a plurality of machine-learning

3   models.

1   10.   The method as claimed in claim 1 wherein calculating at least one

2   electrical characteristic for said extraction sub problem comprises:

3   determining a capacitance per unit length for a subsection of interconnect wiring;

4   and

5   multiplying said capacitance per unit length by a length of said subsection of

6   interconnect wiring.

1   11.   A computer readable medium, said computer readable medium

2   comprising an arranged set of computer instructions for:

3   dividing an integrated circuit layout into at least one extraction sub problem;

4   identifying a set of physical parameters that define said extraction sub problem

5   from said integrated circuit layout;

6   supplying said set of physical parameters to a machine-learning model trained

7   with Bayesian inference implemented with a Monte Carlo method; and

8   calculating at least one electrical characteristic for said extraction sub problem by

9   analyzing said set of physical parameters with said machine-learning model

10   trained with Bayesian inference implemented with a Monte Carlo method.

1   12.   The computer readable medium as claimed in claim 11 wherein

2   said electrical characteristic comprises capacitance.

1   13.   The computer readable medium as claimed in claim 11 wherein

2 said electrical characteristic comprises resistance.

1   14.   The computer readable medium as claimed in claim 11 wherein

2 said extraction sub problem comprises a net.

1   15.   The computer readable medium as claimed in claim 11 wherein

2 said extraction sub problem comprises a section of interconnect wiring.

1   16.   The computer readable medium as claimed in claim 11 wherein

2 one of said set of physical parameters comprises a distance between a pair of interconnect

3 lines.

1   17.   The computer readable medium as claimed in claim 11 wherein

2 one of said set of physical parameters comprises a wire width.

1   18.   The method as claimed in claim 1 wherein one of said set of

2 physical parameters comprises a wire length.

1   19.   The computer readable medium as claimed in claim 11 wherein

2   said arranged set of computer instructions further perform:

3   selecting said extraction sub problem model from a plurality of extraction sub

4   problem models.

1   20.   The computer readable medium as claimed in claim 11 wherein a

2   subset of computer instructions for calculating at least one electrical characteristic for

3   said extraction sub problem perform the follow:

4   determining a capacitance per unit length for a subsection of interconnect wiring;

5   and

6   multiplying said capacitance per unit length by a length of said subsection of

7   interconnect wiring.